for nesting purposes. Increased nesting of swallows inside of the hangar building can lead to an accumulation of droppings on aircraft and other items stored within.

A variety of methods may be used to exclude the birds from nesting areas. Products such as Nixalite, Bird-B-Gone, and Avi-Away have all been used with varying degrees of success. Structural modification such as netting or smooth plastic placed at a 45° angle under the eaves of buildings has been found to prevent nesting of swallows. Fine netting may also be a more durable and readily available method. Netting may also prove more cost effective and durable than the replacement of broken panes of glass.

Swallow nests should be removed before exclusionary devices are installed. A high pressure water hose is useful in removing the nests, but the nests will be rebuilt if the birds are not excluded from the structure. Nest removal must be conducted before eggs are laid. Nests containing eggs or young cannot be disturbed unless authorized through a USFWS and ADF&G depredation permit. USFWS and ADF&G usually will not issue a permit to remove active swallow nests unless there is some emergency health or human safety concern.

Exclude Favorable Telephone-Poles and Towers from Eagle and Raven Perching

Several telephone-poles and towers around the airport facilities are frequent perches for both bald eagles and ravens. Eagles have been observed flying from the far end of a runway and circling the ramp to perch on the telephone-pole with a radio antennae at the Sitka Sound building. This pole has a cross arm that has been observed with two eagles perched on it at the same time as jet traffic is taxiing on the ramp. Such behavior presents a considerable hazard and it supports animals in close proximity to the runways as they are drawn by feeding opportunities around airport buildings. The close proximity of lodging and fueling facilities makes the use of hazing with pyrotechnics unfavorable and unsafe at this location.

In addition to the site previously mentioned, a telephone-pole west of the AKDOT building, the glide slope indicator, and the antennae at the FAA/Weather Service building are also common eagle and raven perching spots. Exclusion from antennae may be difficult due to their design and the fact that exclusion can not interfere with the function of the antennae. Perching on telephone-poles may be eliminated by removing unused cross-arms and installing Nixalite on top of the poles. Exclusion from "live" poles may be unpractical and utility companies should be involved in the planning and installation of exclusionary barriers on any of these types of poles.

Consider Construction of an Airport Perimeter Fence

While the cost and effort involved in the construction of an airport perimeter fence can be quite substantial, moose and bear hazards can only be eliminated if these animals are completely excluded from all aircraft movement areas. Several issues must be considered in undertaking such a project.

1. The fence must completely encompass the runway with no openings. Past experiences have shown that any opening can allow moose or bears access to the airfield. These animals then become trapped inside the fence. Trapped animals can then cause extensive damage to fencing, facilities, or themselves in their efforts to find a way out. Trapped animals then have to be herded out through a gate or shot or tranquilized in order to solve the problem. Any bear or moose found to be inside the perimeter fence should not be ignored.

2. Fencing should cross water sources. Moose and bears are excellent swimmers and will readily cross open water. The construction of culverts and gravel bridges on water courses may be necessary to ensure a more secure perimeter fence. Culvert bridges could also prove feasible in preventing damage to fencing during seasonally high water and associated strong currents that are common to drainages in the area. Large culverts should have bars installed over the intake end to prevent bears from walking through.

3. The fence should be of an adequate height to insure that animals cannot cross over during periods of heavy snow. It should be noted that snowfall in the area can reach a considerable accumulation by late winter, and that drifted snow may allow moose access over the fence.

4. Fencing would require proper maintenance to ensure no breaks or gaps. In extreme cases, removal of snow drifts may be required to ensure moose cannot breech the fence. Whenever feasible, fencing should follow existing roadways. In cases where fencing must diverge from existing roads, the construction of a light duty maintenance road should be considered in order to facilitate repairs and inspection. Any trees or brush cleared to make way for the fence should be removed from the airport. Accumulation of brush and fallen trees can lead to favorable conditions for proliferation of animals such as hares which can lead to an increase in raptors preying on this food source. Accumulation of woody debris can also hinder future action taken in the area.

5. The fence should have a large apron attached at the bottom and buried under ground to discourage bears from digging under the fence and gaining access to the airfield. Even a well constructed fence with proper tension can be easily stretched by a foraging brown bear.

6. Existing fencing should be upgraded to meet the aforementioned considerations.

7. Gates should remain in working order, and in the closed and locked position at all times.

8.0 Literature Cited

Cleary, E.C., S. E. Wright, and R. A. Dolbeer. 1997. Wildlife Strikes to civil aircraft in the United States 1992 - 1996. Report DOT/FAA/AS/97-3. 30pp.

Conover, M. R., W. C. Pitt, K. K. Kessler, T. J. Dubow, and W. A. Sanborn. 1995. Review of data on human injuries, illnesses, and economic losses caused by wildlife in the United States. Wildlife Society Bulletin 23:407-414.

Dolbeer, R. A., S. E. Wright, and E. C. Cleary. 1995. Bird and other wildlife strikes to civilian aircraft in the Untied States, 1994. Interim report DTFA01-91-Z -02004. US Department of Agriculture for Federal Aviation Administration, FAA Technical Center, Atlantic City, NJ. 37pp.

Gresh. T.J. Col. USAF. 1996. Aircraft accident investigation report. E-3b Aircraft #77-0345. Assigned to 3rd Wing, Elmeadorf AFB, Alaska, 22 Sept. 1995 AFI 51-503,PACAF/CG Hickam AFB, Hawaii. 19pp.

Linnell, M. A., M. R. Conover, and T. J. Ohashi. 1996. Analysis of Bird strikes at a tropical airport. Journal of Wildlife Management. 60:935-945.

Linnell, M. A., M. R. Conover, and T. J. Ohashi. 1999. Biases in bird strike statistics based on pilot reports. Journal of Wildlife Management. 63:997-1003.

Milsom, T. P., and N. Horton. 1990. Birdstrike: an assessment of the hazard on UK civil aerodromes from 1976-1990. UK Bird Strike Avoidance Team. 355pp.

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Robinson, M. 1997. The potential for significant financial loss resulting from aircraft bird strikes in or around an airport. Bird Strike Committee, USA, Boston Mass. 20pp.

Thorpe, J. 1997. The implications of recent serious bird strike accidents and multiple engine ingestions. Bird Strike Committee, USA, Boston Mass. 11pp.

Transport Canada. 1994. Wildlife control procedures manual. Environment and Support Services, Safety and Technical Services, Airport Group, Transport Canada, Ottawa, Ontario. TP11500E.

APPENDIX 1

CFR Title 14 FAR Part 139.337

CODES OF FEDERAL REGULATIONS - AVIATION
Wildlife hazard management.

(a) Each certificate holder (*holder of the airport operating certificate*) shall provide for the conduct of an ecological study, acceptable to the Administrator (*FAA*), when any of the following events occur on or near the airport:

(1) An air carrier aircraft experiences a multiple bird strike or engine ingestion.

(2) An air carrier aircraft experiences a damaging collision with wildlife other than birds.

(3) Wildlife of a size or in numbers capable of causing an event described in paragraph (a)(1) or (2) of this section is observed to have access to any airport flight pattern or movement area.

(b) The study required in paragraph (a) of this section shall contain at least the following:

(1) Analysis of the events which prompted the study.

(2) Identification of the species, numbers, locations, local movements, and daily and seasonal occurrences of wildlife observed.

(3) Identification and location of features on and near the airport that attract wildlife.

(4) Description of the wildlife hazard to air carrier operations.

(c) The study required by paragraph (a) of this section shall be submitted to the Administrator, who determines whether or not there is a need for a wildlife hazard management plan. In reaching this determination, the Administrator considers-

(1) The ecological study;

(2) The aeronautical activity at the airport;

(3) The views of the certificate holder;

(4) The views of the airport users; and

(5) Any other factors bearing on the matter of which the Administrator is aware.

(d) When the Administrator determines that a wildlife hazard management plan is needed, the certificate holder shall formulate and implement a plan using the ecological study as a basis. The plan shall-

(1) Be submitted to, and approved by, the Administrator prior to implementation; and

(2) Provide measures to alleviate or eliminate wildlife hazards to air carrier operations.

(e) The plan shall include at least the following:

(1) The persons who have the authority and responsibility for implementing the plan.

(2) Priorities for needed habitat modification and changes in land use identified in the ecological study, with target dates for completion.

(3) Requirements for and, where applicable, copies of local, state, and Federal wildlife control permits.

(4) Identification of resources to be provided by the certificate holder for implementation of the plan.

(5) Procedures to be followed during air carrier operations, including at least-

(I) Assignment of personnel responsibilities for implementing the procedures;

(ii) Conduct of physical inspections of the movement area and other areas critical to wildlife hazard management sufficiently in advance of air carrier operations to allow time for wildlife controls to be effective;

(iii) Wildlife control measures; and

(iv) Communication between the wildlife control personnel and any air traffic control tower in operation at the airport.

(6) Periodic evaluation and review of the wildlife hazard management plan for-

(I) Effectiveness in dealing with the wildlife hazard; and

(ii) Indications that the existence of the wildlife hazard, as previously described in the ecological study, should be reevaluated.

(7) A training program to provide airport personnel with the knowledge and skills needed to carry out the wildlife hazard management plan required by (d) of this section.

(f) Notwithstanding the other requirements of this section, each certificate holder shall take immediate measures to alleviate wildlife hazards whenever they are detected.

(g) FAA Advisory Circulars in the 150 series contain standards and procedures for wildlife hazard management at airports which are acceptable to the Administrator.

APPENDIX 2 (2 pages)

No. 12-34-71-0003-MOU

MEMORANDUM OF UNDERSTANDING
BETWEEN
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION (FAA)
AND
UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH
INSPECTION SERVICE ANIMAL CONTROL (ADC)

ARTICLE 1

This Memorandum of Understanding (MOU) establishes a cooperative relationship between FAA and ADC for resolving animal hazards to aviation that benefits public safety.

ARTICLE 2

This MOU is reached pursuant to the Animal Damage Control Act of March 2, 1931, (7USC 426-426b), and The Rural Development, Agriculture, and Related Agencies Appropriations Act, 1988 (P.L. 100-202), which established the authority of the Secretary of Agriculture to cooperate with States, individuals, public and private agencies, organizations and institutions in the control of nuisance mammals and birds deemed injurious to the public.

The Administrator of the FAA, is empowered to issue airport operating certificates for airports serving air carrier aircraft and certifies that such airports are properly and adequately equipped, and able to conduct safe operations, pursuant to the Federal Aviation Act of 1958, (49USC 1432), as amended. Federal Aviation Regulation (14 CFR Part 139) requires certificated airports having a wildlife hazard problem to develop and implement a wildlife hazard management plan to manage and control wildlife which present a risk to public safety caused by aircraft collisions with wildlife. "Wildlife hazard" has been defined as a potential for a damaging aircraft collision with wildlife, on or near an airport.

ARTICLE 3

FAA and ADC agrees:

a. That ADC has the expertise to provide technical and operational assistance needed to reduce wildlife hazards to aviation on and near airports.

b. That most airports lack the technical expertise to identify underlying causes of wildlife hazard problems, but do have the capability to control their own wildlife, following proper instruction in control techniques.

c. That situations arise where nuisance wildlife control is necessary off airport property (roost relocations reductions in nesting populations, etc.) requiring specialized technical assistance of ADC personnel.

d. That FAA or the certificated airport may request technical and operational assistance from ADC to reduce wildlife hazards. This assistance includes, but is not limited to, site visits to identify wildlife and their movement patterns and habitats which increase the risk of animal and aviation conflicts. ADC personnel may also provide, (1) recommendations on control and habitat management to minimize the hazards, (2) training in the use of control devices, and (3) recommendations on the scope of further-studies necessary to identify and minimize wildlife hazards.

e. ADC shall not be liable or responsible for development, approval, or implementation of wildlife hazard management plans required under PAR Part 139.337, this being the responsibility of the airport operator. Information provided by ADC as a result of site visits or consultation shall be used by the airport operator in developing the wildlife hazard management plan.

f. To meet at least annually to review this agreement, identify problems exchange information on new control methodologies, identify research needs, and prioritize program needs.

ARTICLE 4

All animal damage control activities will be conducted in accordance with applicable Federal, State, and local laws and regulations. ADC personnel shall advise airport operators of their responsibilities to secure necessary permits and/or licenses for control of wildlife.

ARTICLE 5

This MOU defines in general terms, the basis on which the parties will cooperate, and does not constitute a financial obligation to serve as a basis for expenditures. Request for technical, operational, or research assistance which require cooperative or reimbursable funding will be completed under a separate agreement.

ARTICLE 6

This MOU shall supersede all existing MOU'S, supplements, and amendments relating to the conduct of animal damage control programs between ADC and FAA.

ARTICLE 7

Pursuant to Section 22, Title 41, United States Code, no member of or delegate to Congress shall be admitted to any share or part of this MOU, or to say benefit to arise therefrom.

ARTICLE 8

This MOU shall become effective upon the date of final signature and shall continue indefinitely. This Memorandum may be amended at any time by mutual agreement of the parties in writing. It may be terminated by either party upon 60 days' advance written notice to the other party.

APR 13 1989
Date

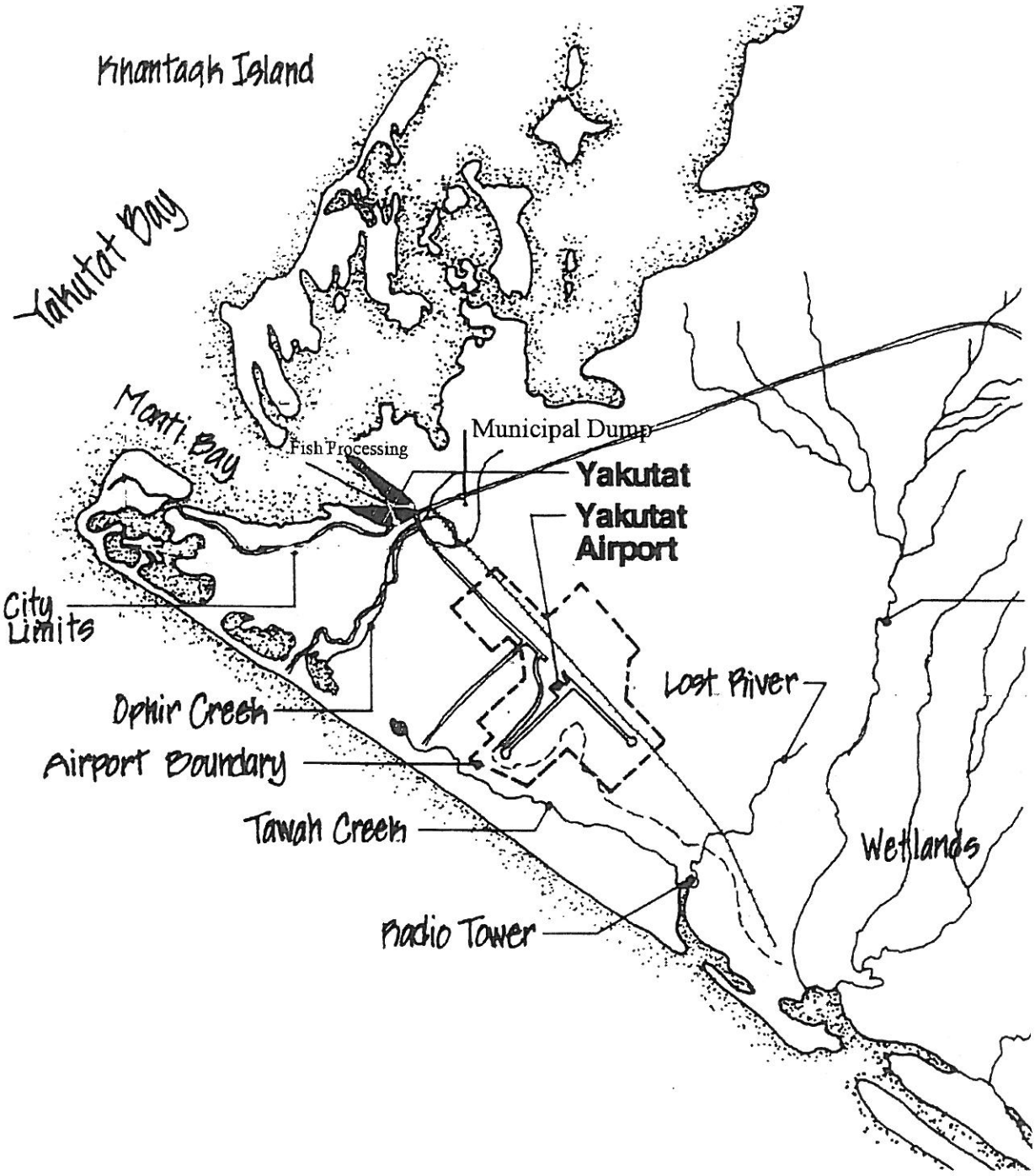
Robert E. Eastburn
(ACTING) Administrator
U.S. Department of Transportation
Federal Aviation Administration

MAR 21 1989
Date

Samuel V. Todd
Acting Administrator
U.S. Department of Agriculture
Animal and Plant Health Inspection Service

APPENDIX 3

Location Map on Yakutat Airport



APPENDIX 4 (2 Pages)

FAA Bird/Other Strike Report Form

Form Approved OMB NO. 2120-0018

U.S. Department of Transportation
Federal Aviation Administration

BIRD/OTHER WILDLIFE STRIKE REPORT

1. Name of Operator	2. Aircraft Make/Model	3. Engine Make/Model

4. Aircraft Registration	5. Date of Incident	6. Local Time of Incident
	___/___/___ Month Day Year	☐ Dawn ☐ Dusk — HR — MIN ☐ Day ☐ Night ☐ AM ☐ PM

7. Airport Name	8. Runway Used	9. Location If En Route *(Nearest Town/Reference & State)*

10. Height *(AGL)*	11. Speed *(IAS)*

12. Phase of Flight

- ☐ A. Parked
- ☐ B. Taxi
- ☐ C. Take-off Run
- ☐ D. Climb
- ☐ E. En Route
- ☐ F. Descent
- ☐ G. Approach
- ☐ H. Landing Roll

13. Part(s) of Aircraft Struck or Damaged

	Struck	Damaged		Struck	Damaged
A. Radome	☐	☐	H. Propeller	☐	☐
B. Windshield	☐	☐	I. Wing/Rotor	☐	☐
C. Nose	☐	☐	J. Fuselage	☐	☐
D. Engine No. 1	☐	☐	K. Landing Gear	☐	☐
E. Engine No. 2	☐	☐	L. Tail	☐	☐
F. Engine No. 3	☐	☐	M. Lights	☐	☐
G. Engine No. 4	☐	☐	N. Other:	☐	☐

(Specify, if "N. Other" is checked)

14. Effect on Flight

- ☐ None
- ☐ Aborted Take-Off
- ☐ Precautionary Landing
- ☐ Engines Shut Down
- ☐ Other: *(Specify)*

15. Sky Condition

- ☐ No Cloud
- ☐ Some Cloud
- ☐ Overcast

16. Precipitation

- ☐ Fog
- ☐ Rain
- ☐ Snow
- ☐ None

17. Bird/Other Wildlife Species

18. Number or birds seen and/or struck

Number of Birds	Seen	Struck
1	☐	☐
2-10	☐	☐
11-100	☐	☐
more than 100	☐	☐

19. Size of Bird(s)

- ☐ Small
- ☐ Medium
- ☐ Large

20. Pilot Warned of Birds ☐ Yes ☐ No

21. Remarks *(Describe damage, injuries and other pertinent information)*

DAMAGE / COST INFORMATION

22. Aircraft time out of service:	23. Estimated cost of repairs or replacement *(U.S. $)*.	24. Estimated other cost *(U.S. $) (e.g. loss of revenue, fuel, hotels)*:
_____ hours	$	$

Reported by *(Optional)*	Title	Date

Paperwork Reduction Act Statement: The information collected on this form is necessary to allow the Federal Aviation Administration to assess the magnitude and severity of the wildlife-aircraft strike problem in the U.S. The information is used in determining the best management practices for reducing the hazard to aviation safety caused by wildlife-aircraft strikes. We estimate that it will take approximately 5 minutes to complete the form. If you wish to make any comments concerning the accuracy of this burden estimate and any suggestions for reducing this burden, send those comments to the Federal Aviation Administration, Management Staff, ARF-10, 800 Independence Avenue, SW, Washington, DC 20591. The information collected is voluntary. Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number associated with this collection is 2120-0045.

FAA Form 5200-7 (3-97) Supersedes Previous Edition ☆ U.S. GPO:1997-418-084/64203 NSN:0052-00-651-9005

U.S. Department
of Transportation

Federal Aviation Administration

800 Independence Ave., S.W.
Washington, D.C. 20591

Official Business
Penalty for Private Use, $300

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 12438 WASHINGTON D.C.

POSTAGE WILL BE PAID BY THE FEDERAL AVIATION ADMINISTRATION

Federal Aviation Administration
Office of Airport Safety and Standards, AAS-310
800 Independence Avenue, SW
WASHINGTON, DC 20591

FOLD AND TAPE HERE

APPENDIX 5 (4 pages)

State and Federal Depredation Permits

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
P.O. BOX 25526
JUNEAU, ALASKA 99802-5526

SCIENTIFIC OR EDUCATIONAL
PERMIT AMENDMENT

AMENDMENT NO. 1

May 25, 2000

Permit No. 00-056

Permittee: Michael G. Binkie
Safety Officer
AK Department of Transportation & Public Facilities
Southeast Region
6860 Glacier Highway
Juneau, AK 99801-7999

Permit 00-056 is amended as follows:

1. At the Yakutat airport, authority is granted to haze moose, brown bears, coyote, and fox by the permittee and subpermittees listed on Permit 00-056.
2. At the Hoonah airport, authority is granted to haze deer and brown bears by the permittee and subpermittees listed on Permit 00-056.
3. At the Gustavus airport, authority is granted to haze moose and black bears by the permittee and subpermittees listed on Permit 00-056.
4. At the Klawock airport, authority is granted to haze deer and black bears by the permittee and subpermittees listed on Permit 00-056.
5. At the Sitka airport, authority is granted to haze deer by the permittee and subpermittees listed on Permit 00-056.
6. At the Haines airport, authority is granted to haze moose and brown bears by the permittee and subpermittees listed on Permit 00-056.
7. At the Kake airport, authority is granted to haze black bears instead of brown bears by the permittee and subpermittees listed on Permit 00-056.

No lethal taking is authorized.

The annual report to the Alaska Department of Fish and Game shall include a summary of the number of animals hazed, the number of incidents, and the effectiveness of the hazing.

All other provisions same as Permit 00-056

Division of Wildlife Conservation

STATE OF ALASKA

TONY KNOWLES, GOVERNOR

DEPARTMENT OF FISH AND GAME

DIVISION OF WILDLIFE CONSERVATION

P.O. BOX 240020
DOUGLAS, ALASKA 99824-0020
PHONE: (907) 465-4265
FAX: (907) 465-4272

25 May, 2000

Michael G. Binkie
Airport Safety and Compliance Officer
Department of Transportation and Public Facilities
Maintenance and Operations/Southeast Region

Dear Mr Binkie:

In reference to your request on 5 May 2000 to renew your permit to remove nuisance beavers, I am responding with this letter which will serve as a permit under 5 AAC 92.041.This permit only applies to the removal of beavers which are flooding airport property in Yakutat. Please encourage the trappers to be respectful of other land users while conducting this removal.
This permit does not require that the trapper(s) have a trapping license, as all beavers are to be turned over to the Department of Fish & Game.

This permit contains the following conditions:

1) This permit is valid only for the areas at or immediately adjacent to the Yakutat airport.
2) All animals taken under this permit shall be presented to and the ADF&G office in Yakutat for sealing by 15 January, 2001.
3) This permit will expire on 31 December 2000, but may be renewed at your request if needed.
4) We receive a report on the trapping activities and effort at each of the sites, as well as a general statement of the success of this program for our files.
5) A copy of this permit is carried by the designated trapper(s) while they are conducting trapping activities.

Sincerely,

Neil Barten
Area Management Biologist
Douglas
Phone: 465-4267
Neil_Barten@fishgame.state.ak.us

11-KB4LH

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DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

3-201
(1/97)

FEDERAL FISH AND WILDLIFE PERMIT

1. PERMITTEE

ALASKA DEPT. TRANSPORTATION
SOUTHEAST REGION, 6860 GLACIER HWY
JUNEAU, AK 99801-7999

2. AUTHORITY-STATUTES
16 USC 703-712

REGULATIONS (Attached)
50 CFR Part 13
50 CFR 21.41

3. NUMBER
MB023404-0

4. RENEWABLE
[X] YES
[ ] NO

5. MAY COPY
[X] YES
[ ] NO

6. EFFECTIVE
01/01/2000

7. EXPIRES
12/31/2000

8. NAME AND TITLE OF PRINCIPAL OFFICER (If #1 is a business)
MIKE BINKIE
AIRPORT SAFETY & COMPLIANCE OFFICER

9. TYPE OF PERMIT
DEPREDATION

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
YAKUTAT AIRPORT
YAKUTAT AK

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

Species authorized:
PELAGIC CORMORANT, DOUBLE-CRESTED CORMORANT, CANADA GOOSE, GREATER WHITE-FRONTED GOOSE, SNOW GOOSE, BRANT, GREAT BLUE HERON, MALLARD, GREEN-WINGED TEAL, NORTHERN PINTAIL, RING-NECKED DUCK, COMMON GOLDENEYE, BARROWS GOLDENEYE, BUFFLEHEAD, COMMON MERGANSER, RED-BREASTED MERGANSER, SANDHILL CRANE, GULLS, SEMIPALMATED PLOVER, KILLDEER, SPOTTED SANDPIPER, LONG-BILLED DOWITCHER, SHORT-BILLED DOWITCHER, PECTORAL SANDPIPER, DUNLIN, COMMON SNIPE, COMMON RAVEN AND NORTHWESTERN CROW.

D. Authorized to take the migratory bird species, listed above, by shotgun in conjunction with control operations to prevent hazards to aircraft.

E. Dead gulls will be promptly picked up and destroyed. Waterfowl suitable for human consumption whould be donated to charitable organizations. All other specimens killed will be turned over to the U. S. Fish and Wildlife Service, Juneau, Alaska, phone (907) 586-7331.

F. Authorized to remove eggs and destroy nests, on airport property, of gulls and the waterfowl species listed above. All eggs that are suitable for human consumption should be donated to charitable organizations. Otherwise the eggs must be destroyed.

[X] ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS
ANNUAL REPORT DUE: 1/31

ISSUED BY	TITLE	DATE
Steve J. Kendall	CHIEF - PERMIT SECTION	02/23/2000

cc: ADF&, Juneau

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

3-201 (1/97)

FEDERAL FISH AND WILDLIFE PERMIT

1. PERMITTEE

ALASKA DEPT. TRANSPORTATION
SOUTHEAST REGION, 6860 GLACIER HWY
JUNEAU, AK 99801-7999

2. AUTHORITY-STATUTES
16 USC 668a

REGULATIONS (Attached)
50 CFR Part 13
50 CFR 22.23

3. NUMBER
MB690087-0

4. RENEWABLE: [X] YES [ ] NO

5. MAY COPY: [X] YES [ ] NO

6. EFFECTIVE
01/01/2000

7. EXPIRES
12/31/2002

8. NAME AND TITLE OF PRINCIPAL OFFICER (if #1 is a business)
MIKE BINKIE
AIRPORT SAFETY & COMPLIANCE OFFICER

9. TYPE OF PERMIT
EAGLE DEPREDATION

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
THE STATE OPERATED AIRPORTS AT GUSTAVUS, HAINES, HOONAH, KLAWOCK, PETERSBURG, SITKA, SKAGWAY, WRANGELL AND YAKUTAT, ALASKA.

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. Authorized to scare Bald Eagles away from the airport property with the aid of cracker shells, pyrotechnics, or other noise-making devices.

E. This permit does NOT allow the killing, injuring, or capturing of any Bald Eagles.

F. Display this permit on request when conducting any authorized activity.

G. Permittee must have written authority from the Alaska Department of Fish and Game, Juneau, Alaska, before exercising any of the authorities granted by this permit.

H. Subpermittes: Anyone trained in bird dispersal work and under the supervision of the permittee. Permittee will supply the issuing office with a list of subpermittees, updated quarterly.

[X] ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS
ANNUAL REPORT DUE 1/31.
REPORT, DETAILING NUMBER OF TIMES EAGLES WERE HARASSED ON AIRPORT PROPERTY, AND METHODS USED, MUST BE REPORTED

ISSUED BY	TITLE	DATE
Steve J. Kendall	CHIEF - PERMIT SECTION	02/22/2000

cc: ADFG, Juneau

APPENDIX 6

Threatened, Endangered, and wildlife species of concern in Alaska, 02/2001

COMMON NAME	SCIENTIFIC NAME	STATE STATUS	FEDERAL STATUS[1]	YAK[2]
MAMMALS				
Bear, brown (Kenai Peninsula pop.)	*Ursus arctos horribilis*	SC		
Sea lion, Steller (western pop.)	*Eumetopias jubatus*	SC	E	
Sea lion, Steller (eastern pop.)	*Eumetopias jubatus*	SC	T	
Seal, harbor	*Phoca vitulina*	SC		
Whale, beluga (cook inlet pop.)	*Delphinapterus leucas*	SC		
Whale, blue	*Balaenoptera musculus*	E		
Whale, bowhead	*Balaena mysticetus*	SC	E	
Whale, finback	*Balaenoptera physalus*		E	
Whale, humpback	*Megaptera novaeangliae*	E	E	
Whale, right	*Eubalaena glacialis*	E		
BIRDS				
Albatross, short-tailed	*Diomedea albatrus*	E	E	
Curlew, Eskimo	*Numenius borealis*	E	E	
Eider, spectacled	*Somateria fisheri*	SC	T	
Eider, Steller's (AK breeding pop.)	*Polysticta stelleri*	SC	T	
Flycatcher, olive-sided	*Contopus cooperi*	SC		M
Goose, Aleutian Canada	*Branta canadensis leucopareia*	SC	T	
Goshawk, northern (SE AK pop.)	*Accipiter gentilis laingi*	SC		
Peregrine falcon, American	*Falco peregrinus anatum*	SC		M
Peregrine falcon, arctic	*Falco peregrinus tundrius*	SC		
Thrush, grey-cheeked	*Catharus minimus*	SC		M
Warbler, Townsend's	*Dendroica townsendi*	SC		M
Warbler, blackpoll	*Dendroica striata*	SC		M
FISH				
Chinook salmon (Snake R.fall	*Oncorhynchus tshawytscha*	SC		
REPTILE				
Sea turtle, leatherback	*Dermochelys coriacea*		E	
PLANTS				
Fern, Aleution shield	*Polystichum aleuticum*		E	

[1]State and Federal Status
- E - Endangered
- T - Threatened
- SC - Species of Concern

[2]Occurrence at YAK
- M - May occur at Yakutat Airport
- O - Observed on Airfield
- N - Observed near YAK

APPENDIX 7

Directory of Wildlife Agencies and Contacts

Wildlife Permit Information

U. S. Fish and Wildlife Service
Migratory Bird Permits
1011 East Tudor Road
Anchorage, AK 99503-6199
(907) 786-3693

Alaska Department of Fish and Game
P. O. Box 25526
Juneau, AK 99802-5526
(907) 465-6195

Threatened and Endangered Species Information

U. S. Fish and Wildlife Service
Ecological Services
3000 Vintage Blvd., Suite 201
Juneau, AK 99801
(907) 586-7240

Alaska Department of Fish and Game
Wildlife Conservation Division
2030 Sea Level Drive, Suite 205
Ketchikan, AK 99901
(907) 225-2475

Alaska Department of Public Safety
Fish and Wildlife Protection
828 Hollis Highway
Klawock, AK 99925
(907) 755-2918

Wildlife Hazard Control Information

USDA - Wildlife Services
Alaska District Office
1800 Glenn Highway, Suite 12
Palmer, AK 99645
(907) 745-0871

USDA - Wildlife Services
WA/AK State Office
720 O'Leary Street, NW
Olympia, WA 98502
(360) 753-9884

APPENDIX 8

Airport Observation Sheet WS Form 121-R

AIRPORT OBSERVATION SHEET

USDA, APHIS, ADC

PAGE OF

AIRPORT NAME | NAME OF OBSERVER | DATE

TEMPERATURE | WIND DIRECTION/SPEED | WEATHER CONDITION (See codes below) | TYPE OF STUDY

TIME	OBSERVATION/ GRID LOCATION	A.O.U. ALPHA SPECIES CODE	NUMBER OF ANIMALS	ACTIVITY (See codes below)	COVER TYPE (See codes below)	DIRECTION OF MOVEMENT	COMMENTS

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

ACTIVITY
FD = feeding
LF = loafing
RS = roosting
NS = nesting
VO = vocalizing
FL = flying/loafing
FP = flying/passing
TW = lowering
HW = hawking insects
ST = standing
RN = running
BD = bedded down

COVER TYPE
RWY = runway
TWY = taxiway
RMP = ramp
ASP = asphalt/concrete
UNP = unpaved road
STR = structure
DTC = ditch
GSH = grass, short
GLG = grass, long
SHR = shrubs
WDL = woodland
MAR = marsh/wetland
CRK = creek/stream
TSW = temporary standing water
PND = pond
RES = reservoir

ADC FORM 121-R
(MAY 93)

APPENDIX 9 (2 pages)

Wildlife Species Observed at Yakutat Airport

Birds

Alder Flycatcher	*Empidonax trillii*
American Kestrel	*Falco sparverius*
American Pipit	*Anthus rubescens*
American Robin	*Turdus migratorius*
Arctic Tern	*Sterna paradisea*
Bald Eagle	*Haliaeetus albicilla*
Barn Swallow	*Hirundo rustica*
Belted Kingfisher	*Ceryle torquata*
Black-billed Magpie	*Pica pica*
Black-legged Kittiwake	*Rissa tridactyla*
Blue-winged Teal	*Anas discors*
Brown-headed Cowbird	*Molothrus ater*
Bufflehead	*Bucephala albeola*
Canada Goose	*Branta candensis*
Chestnut-backed Chickadee	*Parus rufescens*
Common Goldeneye	*Bucephala clangula*
Common Merganser	*Mergus merganser*
Common Murre	*Uria aalge*
Common Raven	*Corvus corax*
Common Snipe	*Gallinago gallinago*
Dark-eyed Junco	*Junco hyemalis*
Dunlin	*Calidris alpina*
Fox Sparrow	*Passerella iliaca*
Glaucous-winged Gull	*Larus hyperboreus*
Golden-crowned Sparrow	*Zonotrichia atricapilla*
Great Blue Heron	*Ardea herodias*
Greater Scaup	*Aythya marila*
Greater Yellowlegs	*Tringa melanoleuca*
Green-winged Teal	*Anas falcata*
Hermit Thrush	*Catharus guttatus*
Killdeer	*Charadrius vociferus*
Lapland Longspur	*Calcarius vociferus*
Lincoln's Sparrow	*Melospixa lincolnii*
Long-billed Dowitcher	*Limnodromus scolopaceus*
Mallard	*Anus acuta*
Merlin	*Falco columbarius*
Pacific Golden Plover	*Pluvialis dominica*
Pectoral Sandpiper	*Calidris melanotos*
Pelagic Cormorant	*Phalacrocorax auritus*

Pine Siskin	*Carduelis pinus*
Red-breasted Merganser	*Mergus serrator*
Red-necked Grebe	*Podiceps grisegena*
Red-necked Phalarope	*Phalaropus lobatus*
Red-tailed Hawk	*Buteo jamaicensis*
Ring-necked Duck	*Aythaya collaris*
Rufus Hummingbird	*Selasphorus rufus*
Rough-legged Hawk	*Buteo lagopus*
Ruby-crowned Kinglet	*Relulus calendula*
Rusty Blackbird	*Euphagus carolinus*
Sandhill Crane	*Grus canadensis*
Savannah Sparrow	*Passerculus sandwichensis*
Semi-palmated Plover	*Charadrius semipalmatus*
Sharp-shinned Hawk	*Accipter striatus*
Short-billed Dowitcher	*Limnodromus griseus*
Short-eared Owl	*Asio flammeus*
Smith's Longspur	*Calcarius pictus*
Snow Bunting	*Plectrophenax nivalis*
Song Sparrow	*Melospiza melodia*
Spotted Sandpiper	*Actitis malularia*
Steller's Jay	*Cyanocitta stelleri*
Tree Swallow	*Tachycineta bicolor*
Trumpeter Swan	*Cygnus buccinator*
Varied Thrush	*Ixoreus naevius*
Western Grebe	*Aechmophorus occidentalis*
White-fronted Goose	*Anser albifrons*
White-winged Scoter	*Melanitta fusca*
Wilson's Warbler	*Wilsonia pusilla*
Yellow Warbler	*Dendroica petechia*
Yellow-rumped Warbler	*Dendroica coronata*

Mammals

Beaver	*Castor Canadensis*
Brown (Grizzly) Bear	*Ursus arctos*
Common Shrew	*Sorex cinereus*
Coyote	*Canis latrans*
Grey Wolf	*Canis lupus*
Marten	*Martes americana*
Moose	*Alces alces*
Red Squirrel	*Tamiasciurus hudsonicus*
Snowshoe Hare	*Lepus americanus*

APPENDIX 10 (12 Pages)

U.S. Department of Transportation

Federal Aviation Administration

Advisory Circular

Subject: HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

Date: 5/1/97
Initiated by: AAS-310 and APP-600

AC No: 150/5200-33
Change:

1. **PURPOSE.** This advisory circular (AC) provides guidance on locating certain land uses having the potential to attract hazardous wildlife to or in the vicinity of public-use airports. It also provides guidance concerning the placement of new airport development projects (including airport construction, expansion, and renovation) pertaining to aircraft movement in the vicinity of hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

2. **APPLICATION.** The standards, practices, and suggestions contained in this AC are recommended by the Federal Aviation Administration (FAA) for use by the operators and sponsors of all public-use airports. In addition, the standards, practices, and suggestions contained in this AC are recommended by the FAA as guidance for land use planners, operators, and developers of projects, facilities, and activities on or near airports.

3. **BACKGROUND.** Populations of many species of wildlife have increased markedly in the last few years. Some of these species are able to adapt to human-made environments, such as exist on and around airports. The increase in wildlife populations, the use of larger turbine engines, the increased use of twin-engine aircraft, and the increase in air-traffic, all combine to increase the risk, frequency, and potential severity of wildlife-aircraft collisions.

Most public-use airports have large tracts of open, unimproved land that are desirable for added margins of safety and noise mitigation. These areas can present potential hazards to aviation because they often attract hazardous wildlife. During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives world-wide, as well as billions of dollars worth of aircraft damage. Hazardous wildlife attractants near airports could jeopardize future airport expansion because of safety considerations.

DAVID L. BENNETT
Director, Office of Airport Safety and Standards

SECTION 1. HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.

1-1. TYPES OF HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS. Human-made or natural areas, such as poorly-drained areas, retention ponds, roosting habitats on buildings, landscaping, putrescible-waste disposal operations, wastewater treatment plants, agricultural or aquacultural activities, surface mining, or wetlands, may be used by wildlife for escape, feeding, loafing, or reproduction. Wildlife use of areas within an airport's approach or departure airspace, aircraft movement areas, loading ramps, or aircraft parking areas may cause conditions hazardous to aircraft safety.

All species of wildlife can pose a threat to aircraft safety. However, some species are more commonly involved in aircraft strikes than others. Table 1 lists the wildlife groups commonly reported as being involved in damaging strikes to U.S. aircraft from 1993 to 1995.

Table 1. Wildlife Groups Involved in Damaging Strikes to Civilian Aircraft, USA, 1993-1995.

Wildlife Groups	Percent involvement in reported damaging strikes
Gulls	28
Waterfowl	28
Raptors	11
Doves	6
Vultures	5
Blackbirds-Starlings	5
Corvids	3
Wading birds	3
Deer	11
Canids	1

1-2. LAND USE PRACTICES. Land use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions. FAA recommends against land use practices, within the siting criteria stated in 1-3, that attract or sustain populations of hazardous wildlife within the vicinity of airports or cause movement of hazardous wildlife onto, into, or across the approach or departure airspace, aircraft movement area, loading ramps, or aircraft parking area of airports.

Airport operators, sponsors, planners, and land use developers should consider whether proposed land uses, including new airport development projects, would increase the wildlife hazard. Caution should be exercised to ensure that land use practices on or near airports do not enhance the attractiveness of the area to hazardous wildlife.

1-3. SITING CRITERIA. FAA recommends separations when siting any of the wildlife attractants mentioned in Section 2 or when planning new airport development projects to accommodate aircraft movement. The distance between an airport's aircraft movement areas, loading ramps, or aircraft parking areas and the wildlife attractant should be as follows:

a. Airports serving piston-powered aircraft. A distance of 5,000 feet is recommended.

b. Airports serving turbine-powered aircraft. A distance of 10,000 feet is recommended.

c. Approach or Departure airspace. A distance of 5 statute miles is recommended, if the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace.

SECTION 2. LAND USES THAT ARE INCOMPATIBLE WITH SAFE AIRPORT OPERATIONS.

2-1. GENERAL. The wildlife species and the size of the populations attracted to the airport environment are highly variable and may depend on several factors, including land-use practices on or near the airport. It is important to identify those land use practices in the airport area that attract hazardous wildlife. This section discusses land use practices known to threaten aviation safety.

2-2. PUTRESCIBLE-WASTE DISPOSAL OPERATIONS. Putrescible-waste disposal operations are known to attract large numbers of wildlife that are hazardous to aircraft. Because of this, these operations, when located within the separations identified in the sitting criteria in 1-3 are considered incompatible with safe airport operations.

FAA recommends against locating putrescible-waste disposal operations inside the separations identified in the siting criteria mentioned above. FAA also recommends against new airport development projects that would increase the number of aircraft operations or that would accommodate larger or faster aircraft, near putrescible-waste disposal operations located within the separations identified in the siting criteria in 1-3.

2-3. WASTEWATER TREATMENT FACILITIES. Wastewater treatment facilities and associated settling ponds often attract large numbers of wildlife that can pose a threat to aircraft safety when they are located on or near an airport.

a. New wastewater treatment facilities. FAA recommends against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in the siting criteria in 1-3. During the siting analysis for wastewater treatment facilities, the potential to attract hazardous wildlife should be considered if an airport is in the vicinity of a proposed site. Airport operators should voice their opposition to such sitings. In addition, they should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.

b. Existing wastewater treatment facilities. FAA recommends correcting any wildlife hazards arising from existing wastewater treatment facilities located on or near airports without delay, using appropriate wildlife hazard mitigation techniques. Accordingly, measures to minimize hazardous wildlife attraction should be developed in consultation with a wildlife damage management biologist. FAA recommends that wastewater treatment facility operators incorporate appropriate wildlife hazard mitigation techniques into their operating practices. Airport operators also should encourage those operators to incorporate these mitigation techniques in their operating practices.

c. Artificial marshes. Waste-water treatment facilities may create artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. FAA recommends against establishing artificial marshes within the separations identified in the siting criteria stated in 1-3.

d. Wastewater discharge and sludge disposal. FAA recommends against the discharge of wastewater or sludge on airport property. Regular spraying of wastewater or sludge disposal on unpaved areas may improve soil moisture and quality. The resultant turf growth requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw. The maimed or flushed organisms and the straw can attract hazardous wildlife and jeopardize aviation safety. In addition, the improved turf may attract grazing wildlife such as deer and geese.

Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

e. Underwater waste discharges. The underwater discharge of any food waste, e.g., fish processing offal, that could attract scavenging wildlife is not recommended within the separations identified in the siting criteria in 1-3.

2-4. WETLANDS.

a. Wetlands on or near Airports.

(1) Existing Airports. Normally, wetlands are attractive to many wildlife species. Airport operators with wetlands located on or nearby airport property should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations.

(2) Airport Development. When practicable, the FAA recommends siting new airports using the separations identified in the siting criteria in 1-3. Where alternative sites are not practicable or when expanding existing airports in or near wetlands, the wildlife hazards should be evaluated and minimized through a wildlife management plan prepared by a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers (COE).

NOTE: If questions exist as to whether or not an area would qualify as a wetland, contact the U.S. Army COE, the Natural Resource Conservation Service, or a wetland consultant certified to delineate wetlands.

b. Wetland mitigation. Mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects. Wetland mitigation should be designed so it does not create a wildlife hazard.

(1) FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in the siting criteria in 1-3. Wetland mitigation banks meeting these siting criteria offer an ecologically sound approach to mitigation in these situations.

(2) Exceptions to locating mitigation activities outside the separations identified in the siting criteria in 1-3 may be considered if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge. Such mitigation must be compatible with safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife should be avoided. On-site mitigation plans may be reviewed by the FAA to determine compatibility with safe airport operations.

(3) Wetland mitigation projects that are needed to protect unique wetland functions (see 2-4.b.(2)), and that must be located in the siting criteria in 1-3 should be identified and evaluated by a wildlife damage management biologist before implementing the mitigation. A wildlife damage management plan should be developed to reduce the wildlife hazards.

NOTE: AC 150/5000-3, *Address List for Regional Airports Division and Airports District/Field Offices*, provides information on the location of these offices.

2-5. DREDGE SPOIL CONTAINMENT AREAS. FAA recommends against locating dredge spoil containment areas within the separations identified in the siting criteria in 1-3, if the spoil contains material that would attract hazardous wildlife.

SECTION 3. LAND USES THAT MAY BE COMPATIBLE WITH SAFE AIRPORT OPERATIONS.

3-1. GENERAL. Even though they may, under certain circumstances, attract hazardous wildlife, the land use practices discussed in this section have flexibility regarding their location or operation and may even be under the airport operator's or sponsor's control. In general, the FAA does not consider the activities discussed below as hazardous to aviation if there is no apparent attraction to hazardous wildlife, or wildlife hazard mitigation techniques are implemented to deal effectively with any wildlife hazard that may arise.

3-2. ENCLOSED WASTE FACILITIES. Enclosed trash transfer stations or enclosed waste handling facilities that receive garbage indoors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles, generally would be compatible, from a wildlife perspective, with safe airport operations, provided they are not located on airport property or within the runway protection zone (RPZ). No putrescible-waste should be handled or stored outside at any time, for any reason, or in a partially enclosed structure accessible to hazardous wildlife.

Partially enclosed operations that accept putrescible-waste are considered to be incompatible with safe airport operations. FAA recommends these operations occur outside the separations identified in the siting criteria in 1-3.

3-3. RECYCLING CENTERS. Recycling centers that accept previously sorted, non-food items such as glass, newspaper, cardboard, or aluminum are, in most cases, not attractive to hazardous wildlife.

3-4. COMPOSTING OPERATIONS ON AIRPORTS. FAA recommends against locating composting operations on airports. However, when they are located on an airport, composting operations should not be located closer than the greater of the following distances: 1,200 feet from any aircraft movement area, loading ramp, or aircraft parking space; or the distance called for by airport design requirements. This spacing is intended to prevent material, personnel, or equipment from penetrating any Obstacle Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway (see AC 150/5300-13, *Airport Design*). On-airport disposal of compost by-products is not recommended for the reasons stated in 2-3.d.

a. Composition of material handled. Components of the compost should never include any municipal solid waste. Non-food waste such as leaves, lawn clippings, branches, and twigs generally are not considered a wildlife attractant. Sewage sludge, wood-chips, and similar material are not municipal solid wastes and may be used as compost bulking agents.

b. Monitoring on-airport composting operations. If composting operations are to be located on airport property, FAA recommends that the airport operator monitor composting operations to ensure that steam or thermal rise does not affect air traffic in any way. Discarded leaf disposal bags or other debris must not be allowed to blow onto any active airport area. Also, the airport operator should reserve the right to stop any operation that creates unsafe, undesirable, or incompatible conditions at the airport.

3-5. ASH DISPOSAL. Fly ash from resource recovery facilities that are fired by municipal solid waste, coal, or wood, is generally considered not to be a wildlife attractant because it contains no putrescible matter. FAA generally does not consider landfills accepting only fly ash to be wildlife attractants, if those landfills: are maintained in an orderly manner; admit no putrescible-waste of any kind; and are not co-located with other disposal operations.

Since varying degrees of waste consumption are associated with general incineration, FAA classifies the ash from general incinerators as a regular waste disposal by-product and, therefore, a hazardous wildlife attractant.

3-6. CONSTRUCTION AND DEMOLITION (C&D) DEBRIS LANDFILLS. C&D debris (Class IV) landfills have visual and operational characteristics similar to putrescible-waste disposal sites. When co-located with putrescible-waste disposal operations, the probability of hazardous wildlife attraction to C&D landfills increases because of the similarities between these disposal activities.

FAA generally does not consider C&D landfills to be hazardous wildlife attractants, if those landfills: are maintained in an orderly manner; admit no putrescible-waste of any kind; and are not co-located with other disposal operations.

3-7. WATER DETENTION OR RETENTION PONDS. The movement of storm water away from runways, taxiways, and aprons is a normal function on most airports and is necessary for safe aircraft operations. Detention ponds hold storm water for short periods, while retention ponds hold water indefinitely. Both types of ponds control runoff, protect water quality, and can attract hazardous wildlife. Retention ponds are more attractive to hazardous wildlife than detention ponds because they provide a more reliable water source.

To facilitate hazardous wildlife control, FAA recommends using steep-sided, narrow, linearly-shaped, rip-rap lined, water detention basins rather than retention basins. When possible, these ponds should be placed away from aircraft movement areas to minimize aircraft-wildlife interactions. All vegetation in or around detention or retention basins that provide food or cover for hazardous wildlife should be eliminated.

If soil conditions and other requirements allow, FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

3-8. LANDSCAPING. Wildlife attraction to landscaping may vary by geographic location. FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. All landscaping plans should be reviewed by a wildlife damage management biologist. Landscaped areas should be monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be implemented immediately.

3-9. GOLF COURSES. Golf courses may be beneficial to airports because they provide open space that can be used for noise mitigation or by aircraft during an emergency. On-airport golf courses may also be a concurrent use that provides income to the airport.

Because of operational and monetary benefits, golf courses are often deemed compatible land uses on or near airports. However, waterfowl (especially Canada geese) and some species of gulls are attracted to the large, grassy areas and open water found on most golf courses. Because waterfowl and gulls occur throughout the U.S., FAA recommends that airport operators exercise caution and consult with a wildlife damage management biologist when considering proposals for golf course construction or expansion on or near airports. Golf courses should be monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be implemented immediately.

3-10. AGRICULTURAL CROPS. As noted above, airport operators often promote revenue-generating activities to supplement an airport's financial viability. A common concurrent use is agricultural crop production. Such use may create potential hazards to aircraft by attracting wildlife. Any proposed on-airport agricultural operations should be reviewed by a wildlife damage management biologist. FAA generally does not object to agricultural crop production on airports when: wildlife hazards are not predicted; the guidelines for the airport areas specified in 3-10.a-f. are observed; and the agricultural operation is closely monitored by the airport operator or sponsor to ensure that hazardous wildlife are not attracted.

NOTE: If wildlife becomes a problem due to on-airport agricultural operations, FAA recommends undertaking the remedial actions described in 3-10.f.

a. Agricultural activities adjacent to runways. To ensure safe, efficient aircraft operations, FAA recommends that no agricultural activities be conducted in the Runway Safety Area (RSA), OFA, and the OFZ (see AC 150/5300-13).

b. Agricultural activities in areas requiring minimum object clearances. Restricting agricultural operations to areas outside the RSA, OFA, OFZ, and Runway Visibility Zone (RVZ) (see AC 150/5300-13) will normally provide the minimum object clearances required by FAA's airport design standards. FAA recommends that farming operations not be permitted within areas critical to the proper operation of localizers, glide slope indicators, or other visual or electronic navigational aids. Determinations of minimal areas that must be kept free of farming operations should be made on a case-by-case basis. If navigational aids are present, farm leases for on-airport agricultural activities should be coordinated with FAA's Airway Facilities Division, in accordance with FAA Order 6750.16, *Siting Criteria for Instrument Landing Systems*.

NOTE: Crop restriction lines conforming to the dimensions set forth in Table 2 will normally provide the minimum object clearance required by

FAA airport design standards. The presence of navigational aids may require expansion of the restricted area.

c. **Agricultural activities within an airport's approach areas.** The RSA, OFA, and OFZ all extend beyond the runway shoulder and into the approach area by varying distances. The OFA normally extends the farthest and is usually the controlling surface. However, for some runways, the TSS (see AC 150/5300-13, Appendix 2) may be more controlling than the OFA. The TSS may not be penetrated by any object. The minimum distances shown in Table 2 are intended to prevent penetration of the OFA, OFZ, or TSS by crops or farm machinery.

NOTE: Threshold Siting standards should not be confused with the approach areas described in Title 14, Code of Federal Regulations, Part 77, (14 CFR 77), *Objects Affecting Navigable Airspace*.

d. **Agricultural activities between intersecting runways.** FAA recommends that no agricultural activities be permitted within the RVZ. If the terrain is sufficiently below the runway elevation, some types of crops and equipment may be acceptable. Specific determinations of what is permissible in this area requires topographical data. For example, if the terrain within the RVZ is level with the runway ends, farm machinery or crops may interfere with a pilot's line-of-sight in the RVZ.

e. **Agricultural activities in areas adjacent to taxiways and aprons.** Farming activities should not be permitted within a taxiway's OFA. The outer portions of aprons are frequently used as a taxilane and farming operations should not be permitted within the OFA. Farming operations should not be permitted between runways and parallel taxiways.

f. **Remedial actions for problematic agricultural activities.** If a problem with hazardous wildlife develops, FAA recommends that a professional wildlife damage management biologist be contacted and an on-site inspection be conducted. The biologist should be requested to determine the source of the hazardous wildlife attraction and suggest remedial action. Regardless of the source of the attraction, prompt remedial actions to protect aviation safety are recommended. The remedial actions may range from choosing another crop or farming technique to complete termination of the agricultural operation.

Whenever on-airport agricultural operations are stopped due to wildlife hazards or annual harvest, FAA recommends plowing under all crop residue and harrowing the surface area smooth. This will reduce or eliminate the area's attractiveness to foraging wildlife. FAA recommends that this requirement be written into all on-airport farm use contracts and clearly understood by the lessee.

Table 2. Minimum Distances Between Certain Airport Features And Any On-Airport Agriculture Crops.

Aircraft Approach Category And Design Group [1]	Distance In Feet From Runway Centerline To Crop		Distance In Feet From Runway End To Crop		Distance In Feet From Centerline Of Taxiway To Crop	Distance In Feet From Edge Of Apron To Crop
	Visual & ≥ ¾ mile	< ¾ mile	Visual & ≥ ¾ mile	< ¾ mile		
Category A & B Aircraft						
Group I	200 [2]	400	300 [3]	600	45	40
Group II	250	400	400 [3]	600	66	58
Group III	400	400	600	800	93	81
Group IV	400	400	1,000	1,000	130	113
Category C, D & E Aircraft						
Group I	530 [3]	575 [3]	1,000	1,000	45	40
Group II	530 [3]	575 [3]	1,000	1,000	66	58
Group III	530 [3]	575 [3]	1,000	1,000	93	81
Group IV	530 [3]	575 [3]	1,000	1,000	130	113
Group V	530 [3]	575 [3]	1,000	1,000	160	138
Group VI	530 [3]	575 [3]	1,000	1,000	193	167

1. Design Groups are based on wing span, and Category depends on approach speed of the aircraft.

Group I: Wing span up to 49 ft.	Category A:	Speed less than 91 knots
Group II: Wing span 49ft. up to 78 ft.	Category B:	Speed 91 knots up to 120 knots
Group III: Wing span 79 ft. up to 117 ft.	Category C:	Speed 121 knots up to 140 knots
Group IV: Wing span 118 ft. up to 170 ft.	Category D:	Speed 141 knots up to 165 knots
Group V: Wing span 171 ft. up to 213 ft.	Category E:	Speed 166 knots or more
Group VI: Wing span 214 ft. up to 261 ft.		

2. If the runway will only serve small airplanes (12,500 lb. And under) in Design Group I, this dimension may be reduced to 125 feet; however, this dimension should be increased where necessary to accommodate visual navigational aids that may be installed. For example farming operations should not be allowed within 25 feet of a Precision Approach Path Indicator (PAPI) light box.

3. These dimensions reflect the TSS as defined in AC 150/5300-13, Appendix 2. The TSS cannot be penetrated by any object. Under these conditions, the TSS is more restrictive than the OFA, and the dimensions shown here are to prevent penetration of the TSS by crops and farm machinery.

SECTION 4. NOTIFICATION OF FAA ABOUT HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AN AIRPORT.

4-1. GENERAL. Airport operators, land developers, and owners should notify the FAA in writing of known or reasonably foreseeable land use practices on or near airports that either attract or may attract hazardous wildlife. This section discusses those notification procedures.

4-2. NOTIFICATION REQUIREMENTS FOR WASTE DISPOSAL SITE OPERATIONS. The Environmental Protection Agency (EPA) requires any operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, section 258.10, *Airport Safety*). The EPA also requires owners or operators of new municipal solid waste landfill (MSWLF) units, or lateral expansions of existing MSWLF units that are located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft.

a. **Timing of Notification.** When new or expanded MSWLFs are being proposed near airports, MSWLF operators should notify the airport operator and the FAA of this as early as possible pursuant to 40 CFR Part 258. Airport operators should encourage the MSWLF operators to provide notification as early as possible.

NOTE: AC 150/5000-3 provides information on these FAA offices.

b. **Putrescible-Waste Facilities.** In their effort to satisfy the EPA requirement, some putrescible-waste facility proponents may offer to undertake experimental measures to demonstrate that their proposed facility will not be a hazard to aircraft. To date, the ability to sustain a reduction in the numbers of hazardous wildlife to levels that existed before a putrescible-waste landfill began operating has not been successfully demonstrated. For this reason, demonstrations of experimental wildlife control measures should not be conducted in active aircraft operations areas.

c. **Other Waste Facilities.** To claim successfully that a waste handling facility sited within the separations identified in the siting criteria in 1-3 does not attract hazardous wildlife and does not threaten aviation, the developer must establish convincingly that the facility will not handle putrescible material other than that as outlined in 3-2. FAA requests that waste site developers provide a copy of an official permit request verifying that the facility will not handle putrescible material other than that as outlined in 3-2. FAA will use this information to determine if the facility will be a hazard to aviation.

4-3. NOTIFYING FAA ABOUT OTHER WILDLIFE ATTRACTANTS. While U. S. EPA regulations require landfill owners to provide notification, no similar regulations require notifying FAA about changes in other land use practices that can create hazardous wildlife attractants. Although it is not required by regulation, FAA requests those proposing land use changes such as those discussed in 2-3, 2-4, and 2-5 to provide similar notice to the FAA as early in the development process as possible. Airport operators that become aware of such proposed development in the vicinity of their airports should also notify the FAA. The notification process gives the FAA an opportunity to evaluate the effect of a particular land use change on aviation safety.

The land use operator or project proponent may use FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents to notify the appropriate FAA Regional Airports Division Office.

It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land use operator or project proponent should also forward specific details of the proposed land use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

4-5. FAA REVIEW OF PROPOSED LAND USE CHANGES.

a. The FAA discourages the development of facilities discussed in section 2 that will be located within the 5,000/10,000-foot criteria in 1-3.

b. For projects which are located outside the 5,000/10,000-foot criteria, but within 5 statute miles of the airport's aircraft movement areas, loading ramps, or aircraft parking areas, FAA may review development plans, proposed land use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. Sensitive airport areas will be identified as those that lie under or next to approach or departure airspace. This brief examination should be sufficient to determine if further investigation is warranted.

c. Where further study has been conducted by a wildlife damage management biologist to evaluate a site's compatibility with airport operations, the FAA will use the study results to make its determination.

d. FAA will discourage the development of any excepted sites (see Section 3) within the criteria specified in 1-3 if a study shows that the area supports hazardous wildlife species.

4-6. AIRPORT OPERATORS. Airport operators should be aware of proposed land use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in the siting criteria in 1-3. Particular attention should be given to proposed land uses involving creation or expansion of waste water treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas.

a. **AIP-funded airports.** FAA recommends that operators of AIP-funded airports, to the extent practicable, oppose off-airport land use changes or practices (within the separations identified in the siting criteria in 1-3) that may attract hazardous wildlife. Failure to do so could place the airport operator or sponsor in noncompliance with applicable grant assurances. FAA recommends against the placement of airport development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants. Airport operators, sponsors, and planners should identify wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects.

b. **Additional coordination.** If, after the initial review by FAA, questions remain about the existence of a wildlife hazard near an airport, the airport operator or sponsor should consult a wildlife damage management biologist. Such questions may be triggered by a history of wildlife strikes at the airport or the proximity of the airport to a wildlife refuge, body of water, or similar feature known to attract wildlife.

c. **Specialized assistance.** If the services of a wildlife damage management biologist are required, FAA recommends that land use developers or the airport operator contact the appropriate state director of the United States Department of Agriculture/Animal Damage Control (USDA/ADC), or a consultant specializing in wildlife damage management. Telephone numbers for the respective USDA/ADC state offices may be obtained by contacting USDA/ADC's Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157. The ADC biologist or consultant should be requested to identify and quantify wildlife common to the area and evaluate the potential wildlife hazards.

d. **Notifying airmen.** If an existing land use practice creates a wildlife hazard, and the land use practice or wildlife hazard cannot be immediately eliminated, the airport operator should issue a Notice to Airmen (NOTAM) and encourage the land owner or manager to take steps to control the wildlife hazard and minimize further attraction.

APPENDIX 1. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR.

1. **GENERAL.** This appendix provides definitions of terms used throughout this AC.

a. Aircraft movement area. The runways, taxiways, and other areas of an airport which are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft exclusive of loading ramps and aircraft parking areas.

b. Airport operator. The operator (private or public) or sponsor of a public use airport.

c. Approach or departure airspace. The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.

d. Concurrent use. Aeronautical property used for compatible non-aviation purposes while at the same time serving the primary purpose for which it was acquired; and the use is clearly beneficial to the airport. The concurrent use should generate revenue to be used for airport purposes (see Order 5190.6A, *Airport Compliance Requirements*, sect. 5h).

e. Fly ash. The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.

f. Hazardous wildlife. Wildlife species that are commonly associated with wildlife-aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a wildlife-aircraft strike hazard.

g. Piston-use airport. Any airport that would primarily serve FIXED-WING, piston-powered aircraft. Incidental use of the airport by turbine-powered, FIXED-WING aircraft would not affect this designation. However, such aircraft should not be based at the airport.

h. Public-use airport. Any publicly owned airport or a privately-owned airport used or intended to be used for public purposes.

i. Putrescible material. Rotting organic material.

j. Putrescible-waste disposal operation. Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.

k. Runway protection zone (RPZ). An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the design aircraft, type of operation, and visibility minimum.

l. Sewage sludge. The de-watered effluent resulting from secondary or tertiary treatment of municipal sewage and/or industrial wastes, including sewage sludge as referenced in U.S. EPA's *Effluent Guidelines and Standards*, 40 C.F.R. Part 401.

m. Shoulder. An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface, support for aircraft running off the pavement, enhanced drainage, and blast protection (see AC 150/5300-13).

n. Turbine-powered aircraft. Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.

o. Turbine-use airport. Any airport that ROUTINELY serves FIXED-WING turbine-powered aircraft.

p. Wastewater treatment facility. Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1987 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. (See 40 C.F. R. Section 403.3 (o), (p), & (q)).

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q. **Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring there of (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this AC, WILDLIFE includes feral animals and domestic animals while out of the control of their owners (14 CFR 139.3, *Certification and Operations: Land Airports Serving CAB-Certificated Scheduled Air Carriers Operating Large Aircraft (Other Than Helicopters)*).

r. **Wildlife attractants.** Any human-made structure, land use practice, or human-made or natural geographic feature, that can attract or sustain hazardous wildlife within the landing or departure airspace, aircraft movement area, loading ramps, or aircraft parking areas of an airport. These attractants can include but are not limited to architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquacultural activities, surface mining, or wetlands.

s. **Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport (14 CFR 139.3).

2. **RESERVED.**

APPENDIX 11 (6 Pages)

CERTALERT

ADVISORY * CAUTIONARY * NON-DIRECTIVE

FOR INFORMATION, CONTACT AIRPORT WILDLIFE SPECIALIST, AAS-317 (202) 267.3389

DATE: 17 November, 1997 **No. 97-09**

TO: AIRPORT CERTIFICATION SAFETY INSPECTORS

TOPIC: WILDLIFE HAZARD MANAGEMENT PLAN OUTLINE

An increasing number of questions are being received concerning the preparation and content of a FAA approved airport wildlife hazard management plan. Title 14 Code of Federal Regulations, part 139.337, *Wildlife Hazard Management*, prescribes the specific issues that a wildlife hazard management plan must address for FAA approval and inclusion in the ACM.

A wildlife hazard assessment, defined as an ecological study in part 139.337 (a), conducted by a wildlife damage management biologist, provides the scientific basis for the development, implementation, and refinement of a wildlife hazard management plan. Though parts of the wildlife hazard assessment may be incorporated directly in the wildlife hazard management plan, they are two separate documents. Part of the wildlife hazard management plan can be prepared by the biologist(s) who conducts the wildlife hazard assessment. However, some parts can be prepared only by the airport. For example, airport management assigns airport personnel responsibilities, commits airport funds, and purchases equipment and supplies. Airport management may request the wildlife biologist to review the finished plan.

The wildlife damage management biologist's primary responsibilities are:

- to provide information on the wildlife attractants that have been identified on or near the airport,
- to identify wildlife management techniques,
- to prioritize appropriate mitigation measures,
- to recommend necessary equipment and supplies, and
- to identify training requirements for the airport personnel who will implement the wildlife hazard management plan.

It is often helpful for the airport manager to appoint a Wildlife Hazard Management Group that has responsibility for the airport's wildlife management program. The biologist should assist the Wildlife Hazard Management Group with periodic evaluations of the plan and make recommendations for further refinements or modifications.

The following details the requirements of part 139.337 (e) and (f) and how those requirements should be addressed in a FAA approved wildlife hazard management plan.

FAR 139.337 REQUIREMENTS	WILDLIFE HAZARD MANAGEMENT PLAN CONTENTS
139.337(e). The (wildlife hazard management) plan shall include at least the following :	The wildlife hazard management plan must include, and/or identify the responsibility of, and/or actions to be taken, –
139.337(e)(1). The persons who have authority and responsibility for implementing the plan.	Specific responsibilities for various sections of the wildlife hazard management plan must be assigned or delegated to various airport departments such as: Airport Director Operations Dept. Maintenance Dept. Security Dept. Planning Dept. Finance Dept. Wildlife Coordinator Wildlife Hazard Group Local law enforcement authorities that provide wildlife law enforcement and other support also have a role to play: State Fish and Game U. S. Fish and Wildlife Service City police County Sheriff
139.337(e)(2). Priorities for needed habitat modification and changes in land use identified in the ecological study with target dates for completion.	Attractants (food, cover, and water) identified in wildlife hazard assessment, with priorities for mitigation and completion dates. Attractants can be grouped by areas and ownership. (A list of completed habitat modification or other projects designed to reduce the wildlife/aircraft strike potential can be included, and provides a history of work already accomplished.) Airport property: Aircraft Operations Area (AOA). Within 2 miles of aircraft movement areas. Within 5 miles of aircraft movement areas. Airport structures Non-airport property Within 2 miles of aircraft movement areas. Within 5 miles of aircraft movement areas. Structures

FAR 139.337 REQUIREMENTS	WILDLIFE HAZARD MANAGEMENT PLAN CONTENTS
Habitat/population management recommendations	Management plans for specific areas, attractants, species, or situations, as identified in ecological study (wildlife hazard assessment). This section may include any or all of the following: Food/Prey-base Management Rodents Earthworms Insects Other prey Trash and debris - handling, storage. Handouts Species specific population management i.e. deer, gulls, geese, coyotes Repelling Exclusion Removal Habitat Management Vegetation Management AOA vegetation Drainage ditch(s) vegetation Landscaping Agriculture Water Management Permanent Water Wetlands Canals/drainage ditches Detention/retention ponds Sewage (glycol) treatment ponds Other water areas Ephemeral water Runways, taxiways, & aprons. Other wet areas Airport Buildings Airfield structures Abandoned structures Terminal Airport construction Resource Protection Exclusion Repelling Chemical Auditory Visual

FAR 139.337 REQUIREMENTS	WILDLIFE HAZARD MANAGEMENT PLAN CONTENTS
139.337(e)(3). Requirements for and, where applicable, copies of local, state and Federal wildlife control permits.	Wildlife can be protected at all levels of government – city, county, state, federal, or may not be protected at all, depending on location and species. Therefore the section should address the specific species involved and their legal status. Wildlife management permitting requirements and procedures (spelled out) Federal - 50 CFR parts 1 to 199. State - Fish and Game Code (or equivalent) City, county - ordinances If pesticides are to be used, then the following are also needed. Pesticide use regulations Federal- [Federal Insecticide, Fungicide, and Rodenticide Act, as amended (FIFRA)] State (varies by state) City/county (if applicable) Pesticide use licensing requirements State regulations
139.337(e)(4). Identification of resources to be provided by the certificate holder for implementation of the plan.	Lists identifying what the airport will supply in terms of: Personnel Time Equipment, (i.e. radios, vehicle(s), guns, traps). Supplies (i.e. shellcrackers, mylar tape) Wildlife Patrol Personnel Vehicle(s) Equipment Supplies Pesticides Restricted/non-restricted Application equipment Sources of Supply
139.337(e)(5). Procedures to be followed during air carries operations, including at least…	
139.337(e)(5)(i). Assignment of personnel responsibilities for implementing the procedures;	Who, when, what circumstances Wildlife Patrol Wildlife Coordinator Operations Dept. Maintenance Dept. Security Dept. Air Traffic Control
139.337(e)(5)(ii). Conduct of physical inspections of the movement areas and other areas critical to wildlife hazard management sufficiently in advance of air carrier operations to allow time for wildlife controls to be effective;	Who, when, how, what circumstances – Runway(s), taxiway(s), and ramp(s) sweeps, AOA monitoring Un-mitigated attractants

FAR 139.337 REQUIREMENTS	WILDLIFE HAZARD MANAGEMENT PLAN CONTENTS
139.337(e)(5(iii). Wildlife control measures;	Who, what circumstances, when, how is the Wildlife Patrol contacted. Wildlife Patrol Bird Control repel capture kill Mammal control repel capture kill
139.337(e)(5)(iv). Communication between wildlife control personnel and any air traffic control tower in operation at the airport.	Communication procedures Training in communication procedures Equipment needed Radios, mobile phones, etc. Lights
139.337(e)(6). Periodic evaluation and review of the wildlife hazard management plan for:	At a minimum the airport operator should hold annual meetings, or after an event described in 139.337(a)(1 to 3), with representatives from all airport departments involved in the airport's wildlife hazard management efforts and the wildlife damage management biologist who did the original ecological study (wildlife hazard assessment).
139.337(e)(6)(i). Effectiveness in dealing with the wildlife hazard;	Input from all airport departments, ATC, wildlife biologist, as to effectiveness of plan. Good records are a must for evaluating the effectiveness of a program. Therefore need to know what records are kept, by whom, how, where, and when.
139.337(e)(6(ii). Indications that the existence of the wildlife hazard, as previously described in the ecological study, should be reevaluated.	Wildlife seen on AOA Request for wildlife dispersal from Tower, pilots, or others Wildlife strike database and other records. Good records are a must.
139.337(e)(7). A training program to provide airport personnel with the knowledge and skills needed to carry out the wildlife hazard management plan required by paragraph (d) of this section.	Wildlife Patrol personnel training All airport personnel - wildlife hazard awareness training Pesticide use training and certification

FAR 139.337 REQUIREMENTS	WILDLIFE HAZARD MANAGEMENT PLAN CONTENTS
139.337(f). Notwithstanding the other requirements of this section, each certificate holder shall take immediate measures to alleviate wildlife hazards whenever they are detected.	Although not required as part of wildlife hazard management plan, this information should be included to fulfill part 139 requirements. Procedures and personnel responsibilities for notification regarding new or immediate hazards by and to: Wildlife Patrol Operations NOTAM issuance/cancellation criteria and procedures Maintenance Security Air Traffic Control Others Rapid response procedures for new or immediate hazards by: Wildlife Patrol Operations Maintenance Security Air Traffic Control Others
139.337(g). FAA Advisory Circulars in the 150 series contain standards and procedures for wildlife hazard management at airports which are acceptable to the Administrator.	AC 150/5200--33 Hazardous Wildlife Attractants on or Near Airports.

OSB

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Airport Safety and Compliance Branch